

# PROTECT 3.M 2.0

MODULAR UPS SYSTEM

Uninterruptible Power Supply

3-Phase Input; 3-Phase Output

20–120 kVA power supply



Networks, workstations, intranet and internet servers, telecommunications applications and other company applications must be permanently available. AEG Protect 3.M 2.0 is the modular UPS solution for IT and telecommunications. Modern data centers require the highest levels of efficiency, reliability and flexibility.

Protect 3.M 2.0 provides a technically convincing and reliable solution to this requirement that can be modularly adapted to any increasing power demand.

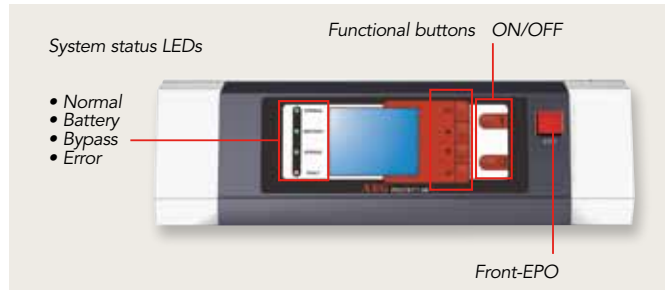
An extension can be made at any time during operation. The flexible redundancy concept ensures a steady power supply to any connected devices.

Lower operating costs for energy and cooling with high efficiency and fast module replacement in the event of power failure, reduce operational costs and ensure an optimal price vs. performance ratio for the Protect 3.M 2.0 UPS solution.

## Key features

- » Modular design allows for flexible adaption to the current power demand
- » Up to 95% efficiency in "online double conversion" mode, up to 98% in ECO mode
- » IGBT technology, input power factor >0.99
- » Low phase effect <3%
- » Redundant control and n+x parallel redundancy for high availability
- » Parallel operation of up to 4 UPS units (max. 480kVA)
- » Module installation and removal during operation ("hot swappable")
- » Graphical LCD screen
- » Built-in manual bypass, separate input for bypass power
- » Load dependent fan speed
- » Small footprint

## PROTECT 3.M 2.0



### Power outages can lead to significant financial loss

Almost all labor and production processes today are based on high capacity data and IT infrastructure. Power outages or voltage fluctuations that lead to systems failure end almost always with disrupted operations, loss of production and, at worst, irretrievable data loss.

Your important IT infrastructure must be permanently available and protected against power disturbances of all kinds. Through the use of VFI (conversion) technology, Protect 3.M 2.0 reliably protects your systems against power outages and network disruptions and ensures the value of your business.

### Modularity provides safety reserves and flexibility

Protect 3.M 2.0 is an uninterruptible power supply of the highest reliability.

With increasing demands on performance, the compact modular design adapts the permitted UPS power according to your current power needs. This can be done without additional installation costs since the power modules can be easily inserted and are automatically recognized by the system ("hot swappable"). No additional connections are required for this operation.

#### Dynamic redundancy

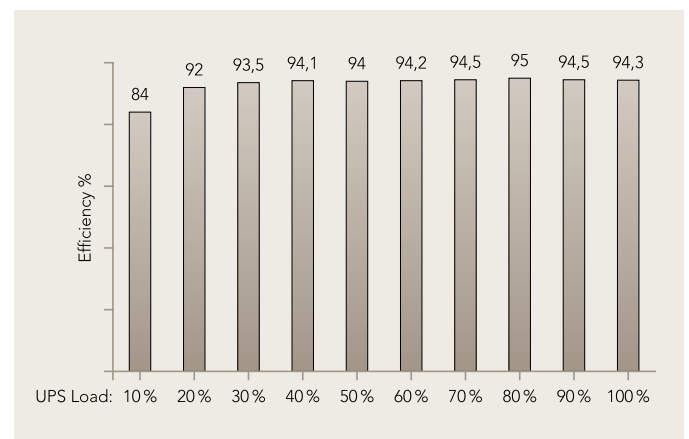
An automatic load balancing to all modules within an appropriately designed system delivers N+x redundancy without the requirement for any configuration changes or increases to load capacity.

### High efficiency lowers operating costs and CO<sub>2</sub> emissions

Protect 3.M 2.0 is based on high efficiency IGBT technology. This provides an efficiency of up to 95% in double conversion mode. With a 35% loading, the UPS still maintains an efficiency of 94%. In addition to the lowering of power loss unwanted generation of heat is also reduced, thereby reducing air conditioning requirements. All of this leads to significant cost savings and a reduction in CO<sub>2</sub> emissions.

#### Input power factor 1.0

100% active power from the UPS reduces the generator specification and consequent installation cost increases.



Classification VFI SS 111 acc. to IEC 62040-3		Protect 3.M 2.0				
Power type rating	20 kVA	40 kVA	60 kVA	80 kVA	100 kVA	120 kVA
	16 kW	32 kW	48 kW	64 kW	80 kW	96 kW
<b>SYSTEM</b>						
Nominal input current	29 A	59 A	88 A	117 A	145 A	172 A
Efficiency (typical)	95 %					
Efficiency in ECO mode	98 %					
Waste heat from power (typical)	1.3 kW	2.6 kW	3.9 kW	5.2 kW	6.5 kW	7.8 kW
	4436 BTU/h	8872 BTU/h	13308 BTU/h	17744 BTU/h	22180 BTU/h	26616 BTU/h
Airflow (max.) m <sup>3</sup> /h	309	617	926	1234	1543	1852
<b>INPUT</b>						
Nominal voltage	3 x 400 V (380 V, 415 V adjustable), 3 phase + neutral					
Input voltage range	305 – 477 V					
Frequency	50 Hz/ 60 Hz (adjustable)					
Total harmonic distortion (THDv)	≤3 % <sup>1)</sup>					
Power factor	>0.99					
<b>INVERTER</b>						
Nominal voltage	3 x 400 V (380 V, 415 V adjustable), 3 phase + neutral					
Frequency	50 / 60 Hz (adjustable)					
Precision static/dynamic	±1 % / ±7 %					
Total harmonic distortion (THDv)	<3 % (linear load), <5 % (non-linear load)					
Max. phase displacement	±1.5 % (balanced load), ±2 % (100 % unbalanced load)					
Admissible overload	125 % for 10 min., 150 % for 60 s					
Crest factor	2.7 : 1					
Max. short circuit current	>270 % of the rated current					
Admissible power factor	0.1 inductive to 0.1 capacitive					
<b>BATTERY</b>						
Rated voltage	±240 V DC					
Max. charging power	5 A	10 A	15 A	20 A	25 A	30 A
Charging principle	Load switching per power module					
Autonomy time	Selectable over external battery cabinet					
<b>STATIC BYPASS</b>						
Nominal voltage	3 x 400 V (380, 415 V adjustable), 3 phase + neutral					
Frequency	50 Hz / 60 Hz (adjustable)					
Synchronization range	±0.1 – ±5 % (adjustable)					
Transfer time at mains outage	0 ms (without interruption)					
Admissible overload	175 % for 10 ms					
<b>GENERAL DATA</b>						
Parallel mode	Up to 4 UPS (central battery possible)					
Audible noise	62 – 69 dB(A) dependent on equipment installed and load state					
Operating temperature range/humidity	0 – 40°C / <95 % (without condensation)					
Protection	IP20					
Color	RAL 7035					
Cable entry	Underside					
Environmental conditions	Free from corrosive air and conductive dust					
<b>COMMUNICATION</b>						
Display	320 x 240 graphical LCD display					
Alarm signals	Acoustic and visual					
Interfaces	Remote signal contact, RS232, 2 x communication slots for SNMP / Modbus / additional relay cards					
<b>DIMENSIONS</b>						
Dimensions approx. D x W x H (mm)	910 x 520 x 1165			975 x 520 x 1655		
Footprint (m <sup>2</sup> )	0.47			0.51		
Weight approx.	139 kg			204 kg		
Weight approx. (incl. module)	169 kg	199 kg	229 kg	259 kg	354 kg	384 kg

1) by THDv ≤2 %

# PROTECT 3.M 2.0



## Intelligent communication

Protect 3.M 2.0 contains a powerful communications module that readily supplies all relevant information (measurements, alarms and error messages). All information is supplied via an easy to use LCD screen

### Large multi-language LCD screen

Languages supported:

- » German
- » English
- » French
- » Spanish
- » Portuguese
- » Italian
- » Turkish
- » Russian
- » Chinese

## Interfaces

- » 6 integrated remote signal contacts
- » RS232 interface
- » Two expansion slots for additional remote signal contacts, MODBUS extension card and SNMP adapter

## Battery Management

Each UPS power module contains its own battery charger with intelligent charging electronics. These can be adapted to the battery in use and facilitate the use of vendor independent standard batteries.

A temperature compensated charging curve ensures an optimum charging regime. Automatic testing informs you of the charging state of charge and when charging will be complete.

## Protect 3.M 2.0 Customer Benefits

### Modular concept

- » The UPS output can be easily adapted to any required performance parameters.
- » Rapid expansion by insertion of new modules at any time and without additional costs.
- » N+1 redundancy module increases reliability

### Low maintenance costs

- » Module replacement in case of failure within the shortest possible time.
- » For multiple UPS devices, module exchange between units is possible.

### High efficiency

- » Efficiency of 94% at 35% load
- » Better efficiency means less heat and thus lower running costs for air conditioning
- » Significant reduction of CO<sub>2</sub> emissions

## AEG Power Solutions

Approach your local AEG Power Solutions representative for further support. Contact details can be found on:

[www.aegps.com](http://www.aegps.com)